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Learning Together Methods of Cooperative Learning Approach in Making Accessories for Intellectual Disability

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***Abstract*—The study aimed to describe the Learning Together (LT) Methods of Cooperative Learning Approach in making accessories including the implementation, the production of patchwork headbands, and the findings the learning approach on mild intellectual disability. This Classroom Action Research used an action research model consisting 4 cycles. A research cycle was carried out through the planning stage, continued to acting stage and developing stage, and then ended with reflecting stage. The subjects were students of mild intellectual disability in the Beauty Management class of Public SLB (extraordinary school) Pembina Yogyakarta. Data collection used instruments of assessment sheets for group performance, observation, and documentation. Data analysis technique was descriptive analysis. The results showed that the learning together (LT) methods of cooperative learning approach can complete the performance of making the patchwork headbands accessories. The quantity of accessories production in the cycle I produced 9 pieces and met the criteria of success. In the cycle II, there was an increase to 12 or 33.33% and the result was above the criteria of success. In Cycle III and IV, there increased the criteria of success, but the results of the performance can meet the criteria and there was consistency in the results of the performance.**

Keywords*— *learning together (lt) methods of cooperative learning approach, intellectual dissability

I. INTRODUCTION

Intellectual disability (Mental Retardation) is a specific development of a person accompanied by disorders. The disorders characteristics include intellectual disability (mental retardation), motoric development delays, social barriers, and academic learning barriers. Moreover, the Intelligence Quotient of intellectual disability classifies as low, as described in Table I.

TABLE I. LEVELS OF MENTAL RETARDATION [1]

Level	IQ Range	IQ Deviation Cutting Point	Exten Concurent Adaptive limitation
Mild	50-55 to 70-75	-2 SD	Two or more domains
Moderate	35-40 to 50-55	-3 SD	Two or more domains
Severe	20-25 to 35-40	-4 SD	All domains
Profound	Below 20 or 25	-5 SD	All domains

(Source: John R. Graham & Jack A. Naglieri, 2003: 434)

Then, it requires special treatment in teaching for intellectual disability students with self-development as main learning.

In Indonesia, learning skills increasingly become a concern because academically this might not be imposed on people with intellectual disability condition. According to the regulation of the Director General of Republic of Indonesia Number 10 of 2017 on Curriculum Structure, Core Competencies-Basic Competencies, and Guidelines for Implementation of curriculum 2013 on Special Education, intellectual disability at the Extraordinary Junior High School/SMPLB has the most time allocation of study hours in elective skills subjects, ie 18 hours of study / JPL. Then, the vocational optional skills at Extraordinary Senior High School/SMALB also have the most time allocation of study hours (JPL) compared to other subject. The subjects of vocational skills are 24 JPL (study hours) for class X and 26 JPL (study hours) for class XI and XII. In sum, the learning vocational skills become important things for people with intellectual disability and the learning strategies are needed to integrate the special education and vocational education for people with intellectual disability.

In vocational education requires vocational skills which require the fine motor skills and precision steps in practice. Then, not all students with intellectual disability can fully complete the skills steps learned due to the limitations of the condition. Guidance, mentoring and the role of teachers and parents greatly influence the success of people with intellectual disability in working independently. Vocational learning should follow the needs of the workplace and learning environment that resembles a real work atmosphere. Then, self-development learning skills also need to be taught on how to deal with and behave towards the job in accordance with the skills. In the employment pyramid, people with intellectual disability can be trained into the level of laborer and maximum the helper on technique, such described in Figure 1.

Fig 1. The Employment Pyramid and Education Level [2]

This phenomenon becomes a new challenge for special education because it must integrate special and vocational education in educating the students' skills, especially people with intellectual disability with below-average of IQ. So, they will have difficulty on thinking abstractly. Nevertheless, a person with an intellectual disability still has the ability to imitate and ignore the theory. Then, a teaching strategy is needed by adjusting the material skills and conditions of students, in order to achieve the learning objectives through action research.

A. *Diagnosis of the Problem*

In the public Extraordinary school (SLB) Pembina Yogyakarta, the learning skills are taught in the Learning Group (class) / skills class. In one class consists the students of SMPLB and SMALB that study one skill or more than one skill. At the school, it also teaches the agricultural skills, timber, ceramic crafts, textiles, souvenirs, fashion, beauty, information technology, and cooking. Learning skills for a person with an intellectual disability certainly requires strategies according to conditions of heterogeneous ability of each student.

Besides learning about beauty, students in Beauty class also learn about the souvenir skills. Learning the souvenir skills in the class has a problem in the performance's completeness of making accessories. Not all students can fully complete the work assigned by the teacher independently and they need teachers' guidance and assistance such in making headbands material. Not all students are able to fully complete the performance with the time limit and product quality standards. Then, it becomes a problem in the consistency and ability to accept the order accessories.

Based on the observation of the subject condition and learning implementation on pre-action, describes the diagnosis of problems in the class;

- The students are intellectual disability, some of them are mild autism, and physical disability; ie tremors with wrist conditions sometimes suddenly trembling
- The level of IQ is 55-65; based on IQ scores in table 1, it includes in the mild classification.
- Having heterogeneous learning problems with an individual disorder of various motoric, social, psychological and mental developmental barriers, impact to different ability in master the material
- Have different tribe and area of residence, some of them are from outside Java with heterogeneous economic and social backgrounds
- Not all students are able to fully complete the task and on time.
- The process of producing learning still carry out individually and the teacher still has to be involved a lot to help and guide the students in completing the production.
- Students still need motivation to be responsible to complete the task, cooperate and help each other in learning.
- The teacher has difficulty predicting the production ability when receiving an order due to the individual students' ability in producing.

B. *Focus and Problem Statements*

a) *Focus of the Problems*

Based on the diagnosis of problems found in the class, then this study is set according to the learning material in the classroom, which focused on making patchwork headbands accessories on students with an intellectual disability through cooperative learning with learning together (LT) methods of cooperative learning approach. The choosing learning approach based on previous studies that it has proved and improved various fields of education. Teachers need to develop more interesting learning and can improve the learning processes and outcomes. In addition, this study conducted to continue the previous studies learning together (LT) methods of cooperative learning approach that has been widely recommended and proved to provide improvements and increase in education.

b) *Problem Statements*

Based on background and focus of the research, the problem statements were:

- How do the implementation of making patchwork headband accessories through learning together (LT) methods of cooperative learning approach on students with intellectual disability in beauty class at Public Extraordinary School (SLB) Pembina Yogyakarta?
- How do the result of producing the patchwork headband accessories through learning together (LT) methods of cooperative learning approach on students with intellectual disability in beauty class at Public Extraordinary School (SLB) Pembina Yogyakarta?

C. *Research objectives and Significances*

In general, the particular action research aimed to find out the implementation of making patchwork headband accessories with learning together (LT) methods of cooperative learning approach to students with intellectual disability. The specific objectives; through the learning approach can provide improvements to learning processes and outcomes, minimize the involvement of teachers, and be an independent student with mentoring. Moreover, students are also expected to make a working together and are responsible for making patchwork headbands through group performance by determining the Success Criteria / KK. Thus, students can

also learn to adapt themselves to the world of work that usually applies production targets.

The significances of this research were either to improve the quality of learning skills in the schools or also increase the teachers' insight in improving their performance in teaching and learning process. For students; they will receive variations and real on learning and can build the character of work in order will ease the duty of parents or family because students can do useful things for others. From a theoretical point of view, the results of this study are expected to be a reference and input in special education, especially in developing skills education for students with intellectual disability.

The rest of this paper is organized as follow: Section II describes the literature review. Section III describes the proposed material and methodology. Section IV presents the obtained results and following by discussion. Finally, Section V concludes this work.

II. Literature Review

This section presents the literature review.

A. Related work

A relevant research to the subjects in this particular study entitled "Teachers' Perceptions of Academic Intrinsic Motivation for Students with Disabilities" published in The Journal of Special Education. In the study, explained that including student classroom collaboration variables such as frequency of participation in peer work and classroom discussion to the model reduced disparities in teacher-perceived academic IM between students with autism and learning disabilities [3]. The description might become a consideration in carrying out this study using a cooperative approach to learning for a student with intellectual disabilities.

Furthermore, other relevant research on cooperative learning was "The Effects of Cooperative Learning on the Academic Achievement and Knowledge Retention", which described that future studies should apply cooperative learning with more participants to generate more evidence of the cooperative learning effects [4]. Then, a research entitled "Effect of Learning-Together Technique on Pupils Achievement in Primary Mathematics". The study concluded that learning together technique of cooperative learning method is more effective than the traditional method [5].

Based on a number of previous relevant studies, showed that LT method of cooperative provides improvements in learning. The learning model can be applied to both general and special students. In short, the authors interested to research the making of accessories with learning together (LT) methods of cooperative learning approach on students of intellectual disability at Extraordinary Schools.

B. Literature review

Persons with disabilities include those who have long-term physical, mental, intellectual and sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others [6]. Therefore, special education is needed in accordance with their special need. Intellectual disability for example, mental and intellectual barriers make them difficult to understand the output information, so they often fail in academic in the conventional learning [7]. All of these barriers occur in a child's developmental stage before they are at the age of 18 years and might group according to their IQ as described in table 1. Then, the language barrier will also add those with intellectual disability. They are not experiencing articulation damage, but the vocabulary processing is not functioning properly, and then, they need to listen to concrete words as often. In short, due to students with an intellectual disability have mental, emotional, social and intellectual barriers; they will have difficulty in abstract thinking.

What is learning theory? A theory is an explanation for why something occurs or how it occurs [8]. With learning theory can help an educator to teach appropriately according to the conditions of the students and determine an appropriate learning strategy or model in the teaching process. Another opinion described that learning is measured based on the changes in behavior [9] and the learning must always be converted into behavior or actions observable even though the changes are only temporary and not permanent or do not occur immediately after the learning process. Also, it can be strengthened by experience and practice, so it becomes a habit for good results.

Cooperative learning refers to a variety of teaching methods in which students' works in small groups to help one another learn academic content [10]. This learning model was carried out in research at John Hopkins University, Baltimore, America. With the results can provide improvements in learning, so researchers continue developing the learning model approach in various studies. In cooperative learning, the success of learning and groups depends on the abilities and activities of group members, both individually and in groups who must be responsible for their respective tasks and help each other in completing group assignments. The implementation consists of 6 learning phases; (1) phase 1 presents the objectives and prepares the students, (2) phase 2 presents the information, (3) phase 3 organizes the students into learning groups, (4) phase 4 assists and guide the teamwork and learning, (5) phase 5 evaluates, and 6) phase 6 is awarding or giving a reward [11].

Learning together (LT) methods is a development of cooperative learning models by Johnson and Johnson, supported by Shlomo Sharan and continued by Slavin. In 1975, David Jonhson and Robert Johnson published a book "Learning Together and Along: Cooperation, Competition and Individualization" which made Learning Together (LT) type learning popular at that time. After LT type learning is known by Educational figures, the studies emerged on the learning model. For example; a research conducted by David and Roger Johnson in 1978 and their colleagues at the University of Minnesota. Robertson conducted a study to teachers to implement LT type learning, and in fact, it could bring improvements in learning. Other research on LT also outlined that the notion of helping each other is the most obvious in Learning Together technique which requires the equal contribution of each member of the group in their learning process as well as their accountability [12]. Thus, learning together increasingly obtain an attention from the international world that it can improve a learning. In a study on the focus of learning in the 21st century described that the day emphasizes the benefits of learning together; of individuals, communities, nations and international bodies

collaborating to turn well-meaning rhetoric into observable reality [13].

In Indonesia, there found the number of research on LT learning. In a journal article at a teaching faculty of university explained that through learning together (LT) methods of cooperative learning approach can foster a virtuous character among students and teachers [14]. This fact supports on positive research evidence of LT. Then, the article tried to research on making the accessories by students with an intellectual disability through the learning approach. The purpose of the learning approach applied in this study was to unite group members with different backgrounds in order they are able working together, complete each other, build a sense of individual and group responsibility, and most important, helping each other, especially students who have better ability expected will help to complete the work of a group of friends in order a students who have lower ability able to complete the task/job. Then, the expected performance of learning in the making of patchwork accessories can be achieved.

Based on the literature reviews, concluded that learning together (LT) methods of cooperative learning approach can lead to positive interdependence among group members formed by defined the common goals, prioritizing on social interaction and learning by emphasizing the social interaction, and using procedures that specially designed to use in a class or group in order the group can work together for a long time period.

III. MATERIAL & METHODOLOGY

The research conducted at Public Extraordinary School (SLB) Pembina Yogyakarta, located in Imogiri Timur Street no 224, Giwangan, Umbulharjo, Yogyakarta, Indonesia. The subject was students of intellectual disability of SMPLB and SMALB in beauty class. The research was a qualitative, and then the data was a descriptive narrative. The particular research used action research by Mertler dan Charles including planning stage for your action research, acting on the plan, developing an action plan for future cycles and reflecting on the process. Figure 2 is the cycling process of action research procedures.

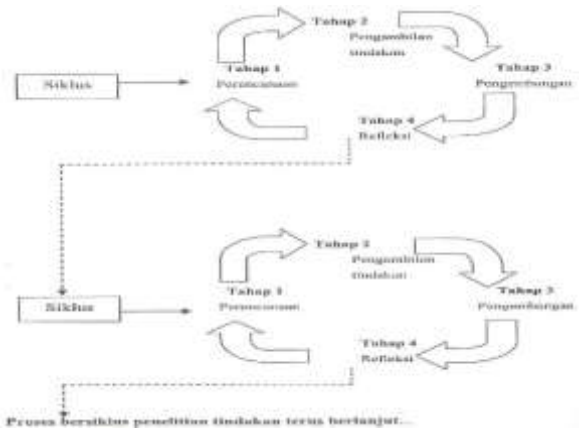

Fig. 2. The Ongoing, Cyclical Process of Action Research [15]

Action scenarios are carried out on the material of making patchwork headbands accessories through LT learning steps. The steps of implementation are (1) delivering the goals and preparing students; (2) delivering the information; (3) organizing students into learning teams; (4) helping and guiding teamwork in learning and practice; (5) evaluating; and (6) awarding or giving a reward. Action research carried out in several cycles with a certain time allocation, ie 3 hours of learning or 135 minutes duration including preparation, opening, core activities, and closing.

The method in this particular research was observation. Data collection techniques used instruments of assessment sheets with the assessed guidances or assessed aspects, are: (1) preparing a cloth pattern to wrap around headbands; (2) cutting the headband pattern; (3) wrapped around entire the surface of plastic headbands with the prepared pattern; (4) tracing the patterns for a circular corsage of 6 cm in diameter by 5 pieces; (5) cutting out the five corsage patterns; (6) preparing needles and threads to sew the cloth by hand; (7) fold the circle pattern into ¼ section; (8) stretching along the edge ¼ circle of the folded pattern; (9) assembling the five circle patterns into flower shapes; (10) apply buttons as flower pistils; and (11) apply the corsages to headbands. Assessment rubrics on each performance aspect of the research instrument are; (1) completed / T; the performance can be completed on time and in accordance with the techniques of assessed aspect, and (2) not completed; the performance cannot be completed on time and/or not according to the technique of assessed aspect. Then, it continues to determine the success criteria of the action, such described in Table II.

TABLE II. RUBRICS OF COMPLETION CRITERIA FOR EVERY ASPECT IN THE PERFORMANCE

No	Success Criteria/KK	Description
1	-	Complete and the amount of production is less than the specified target
2	**0**	Complete and the amount of production is in accordance with the specified target
3	+	Complete and the amount of production is more than the specified target

Observations during the treatment were carried out by researcher assisted by a team of teachers who collaborate with the researcher to determine each strategy and evaluate in each cycle. Data analysis technique aimed to test the problem statements in each cycle and recapitulates the results of actions in 4 cycles presented into tables and graphs.

IV. RESULTS AND DISCUSSION

This section presents the results obtained and following by discussion.

A. *Result*

This action research was on making accessories with learning together (LT) methods of cooperative learning approach on students with an intellectual disability that grouping into a group based on the result of assessment in pre-treatment. It conducted in 4 cycles and in line with the schedule in the class. Each cycle consisted of 4 activities; planning, acting, developing and reflecting, such described as follow;

a) Description of treatment result on Cycle I

The first step in cycle 1 is planning; including preparation of tool, material and work area and all of those are prepared by teachers' team and students. Then, it also included preparation of worksheets, assessment, note, observation, and documentation. In the acting stage, the performance performed by all the students' group in the observed class. The division of task is assisted by teachers and adapted to skills of a member on the team with the determined criteria of success

Group	Cycle I			Cycle II			Cycle III			Cycle IV		
	Amount of Production	UK/ Work Performance	Success Criteria/ KK	Amount of Production	UK/ Work Performance	Success Criteria/ KK	Amount of Production	UK/ Work Performance	Success Criteria/ KK	Amount of Production	UK/ Work Performance	Success Criteria/ KK
1	3	T	0	4	T	+	4	T	0	4	T	0
2	3	T	0	4	T	+	4	T	0	4	T	0
3	3	T	0	4	T	+	4	T	0	4	T	0
Amount of Product	9			12			12			12		

are 3 headbands on production and time duration of 3 JPL or 105 minutes.

In the developing stage, it performed assessment and observation assisted by the teacher who teaches in the class and determined 3 headbands on production total as criteria of success for each group. There some obstacles found in the acting stage, that is unstabilized electrical installation - it impacts to process of learning. And, class atmosphere is crowded due to the machine's sound in other class which making the learning is not conducive. In the reflecting stage, there performed an evaluation on fabric material which is too smooth according to students' opinion which makes hard in the process of performance. However, the criteria of success are still fulfilled. There also performed an evaluation on task division to the member of the group in order the tasks are given to the correct person according to teachers' perspective.

b) Description of treatment result on Cycle II

The first stage to the third stage in cycle II basically is the same with cycle I. In acting stage, the division of task is assisted by teachers and adapted to observation notes on the performance of member and group in collaboration. It expected the students are better in performance.
The electrical installation is fixed and might not disrupt the process of learning. The cotton fabric material is selected to ease the students in performance. The learning runs well. In reflecting stage, there increased of the total of production; from 3 headbands to 4 headbands per group.

c) Description of treatment result on Cycle III

The stages in the cycle III are the same with the previous cycle. If in previous cycles, teacher give reward only in a form of appreciation and wise word, and teachers in cycle III give a gift as a reward. The groups that succeed to fulfill the criteria are allowed to bring home a headband of their work before the headband are packaged and sold in the market. In fact, the students are more enthusiastic and serious on performance and the production increased better. The teachers' team has an idea of rewarding their students in reflecting stage. Every group that succeeds to fulfill the production will have a gift of accessories - they are also allowed to choose the gift by themselves and might be collected in order they can learn how to sell the product outside the school.

d) Description of treatment result on Cycle IV

In cycle IV, all the stages run well. Students are more enthusiastic in performing the task in a group than individually. With a group performance, not only increase the self-confident, but they are also enthusiastic to collect the gift to sell by them. In this cycle, the production fulfills the criteria. Means, there are a consistency of production respectively from cycles II, III, and IV.

The result of treatment the learning together (LT) methods of cooperative learning approach is presented in the following Table III.

TABLE III. RECAPITULATION THE TREATMENT RESULTS

UK: Work Performance (see table 2)

Recapitulation the treatment results based on the amount of production from Table III is presented into graphs or line diagrams in Figure 3.

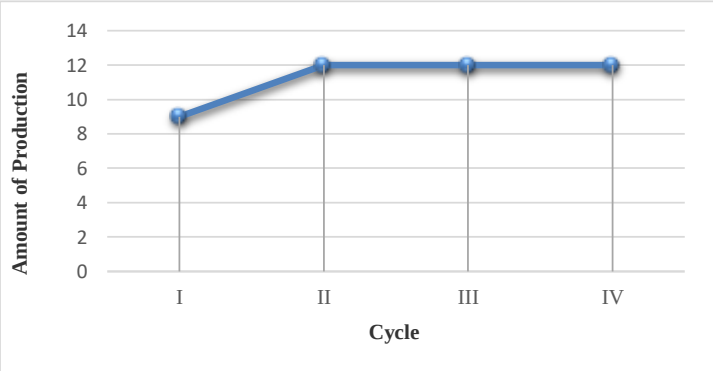

Fig 3. Diagram of Recapitulation the treatment results based on the amount of production

The results of the recapitulation of the treatment in table 3 showed that the making accessories by all groups of performance in the cycle I, can produce 3 headbands per group - means, all groups fulfill the criteria and the amount of production in the class is 9 headbands. Then, there increased the amount of production in the cycle II. Each group can complete 4 headbands and the amount of production in the class is 12 headbands - means, it is above criteria. The criteria in the cycle III increased from a minimum production of 3 headbands to 4 headbands. In fact, they succeed and the

amount of production in the class was the same as the amount the previous cycle, is 12 headbands. Furthermore, in the cycle IV, the criteria fulfilled. Each group can produce 4 headbands and the amount is 12 pieces. This fact showed a consistency of the success of the action on the fulfilled the determined production targets after increased the minimum amount of production in the cycle II to the cycle III. Starting from cycle II to cycle IV, the amount of production is inconsistent numbers. Means, learning together (LT) methods of cooperative learning approach can improve the making of patchwork headbands accessories produced by students with intellectual disability in the beauty class at Public Extraordinary School (SLB) Pembina Yogyakarta.

e) Discussion

It has proved that the learning together (LT) method of cooperative learning can be implemented on learning skills with intellectual disability subjects. Although it is applicable, the implementation needs to adapt to the learning situation and conditions. Table IV describes the implementation of learning together (LT) method of cooperative learning.

TABLE IV. SYNTAX MODIFICATION OF COOPERATIVE APPROACH WITH LT TYPE AND ITS BENEFITS

No	Syntax of *LT*	Syntax implementation	Benefits
1.	Teacher explains the material	Teacher explains the material and learning model	Students recognize the learning model of cooperative approach with LT type
2.	Make a group with 4 or 5 heterogeneous students as members	Group making based on the result of assessment and observation on pre-treatment	Facilitate the teacher in group making based on pre-treatment
3.	Each group receive assignment sheets as the material discussion and complete it	Work division of work performance to each members of group conducted by teacher, and teacher guides the students during the work performance	- Students have not much assignments because the assignemt is collectively - Build the attitudes of care to other and responsibility to assignment - The entire assessment aspects in work performance can be completely completed - The teachers' duty is more easy in teaching
4.	Groups present the result of work	The presentation is only conducted by a group because there is only a group in one meeting performed work performance	- Train the students to interact, communicate and increase the self-confidence - Facilitate the teacher performing assessment
5.	Give appreciation and reward based on the result of group work.	Teacher gives reward, such as praise and students can take one of the work result, and the rest of work is for class production needs	- The learning is more fun and pleasure, students are more diligent in training - Facilitate the teacher to evaluate the learning to improve the next learning meeting

Based on Table IV above, concluded that the implementation of learning syntax is simplified and implemented by teachers' guidance in the division of members' tasks and the presentation of the results of group work. Nevertheless, the principles of learning together (LT) method of cooperative learning can still be applied properly.

People with intellectual disability who have some limitations will always need assistance from others, especially in interacting and abstract thinking. However, they still have the same rights as humans and citizens. Through the learning together (LT) method of cooperative learning that emphasizes on social interaction should give advantages for the social development of people with intellectual disability. As the impact, it will increase self-confidence and motivated to have a sense of responsibility, mutual help, and respects to others. Then, in this study, the learning together (LT) method of cooperative learning in making accessories performed by people with intellectual disability can produce better products than individual learning, because in comparing to pre-learning activities are still performed individually and there are still some students who have not yet completed their work performance. Based on the results of the recapitulation of the total production on all actions in 4 cycles, a teacher can find the ability of production for students with intellectual disability in beauty class at Public Extraordinary School (SLB) Pembina Yogyakarta.

Teaching skills to people with intellectual disability is an effort to improve their level in the middle of society. If they trained by appropriate skills with routine, patient and consider the appropriate teaching strategies, in fact, they can also work as the community. This fact certainly will give further support on vocational learning which is starting becoming a concern in special education. Therefore, teachers of intellectual disability students also need to have knowledge and experience on the vocational field and not just mastering or expert in the field of vocational skills.

Based on the findings and discussion, the researcher would like to express the following opinions. (1) educating students with special needs, especially intellectual disability in learning skills is very necessary to apply vocational learning and reward, (2) educators of students with special needs, especially intellectual disability must always make learning innovations according to the needs of the workforce, and (3) the learning of vocational skills as described in the special education curriculum will be more effective and efficient when carried out cooperatively or in a team. Therefore, a person with intellectual disability who has graduated is expected to have a community in the work because not all students can do all aspects of the skills with their motoric disorder and they depend on each other to produce work. Thus, they suppose to attend the closest school of their residence. The reason, by the time they graduate and they have not a job, they can still make a production and service team with assistance and guidance.

V. CONCLUSION

Based on all the descriptions in this study, it draws conclusions in this classroom action research through the LT method of cooperative learning approach as follows.

- Before implementing learning together (LT) method of cooperative learning on students with intellectual disability, emphasizing on individual assessments should be carried out to facilitate the making group.
- The learning together (LT) method of cooperative learning in making accessories on students with an intellectual disability has many pedagogical benefits. However, the benefit disappears when the cooperative learning team becomes ineffective.
- This research is limited to subjects and material adapted to the focus of the research and there are many lacks among in the process, implementation, and results of actions. Then, the researcher is welcome to receive advice and input from various parties to complete this research.
- Although there are still many lacks and limitations, the results of this study are expected to be a consideration especially for the teacher on special education in developing insight and knowledge in order to improve the quality of learning, especially vocational skills learning for students with special needs, especially intellectual disability.
- The recommendations for further research; research conducted on the same subjects with a more various disability for example or carried out in a wider scope to prove and re-examine this research.

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